

REMARKS

Claims 1-3, 5 and 7-9 are pending, upon entry of the amendment above. Favorable reconsideration is respectfully requested.

The present invention relates to a hard film formed of a material containing a ($M_1 - xSi_x$) ($C_{1-d}N_d$) compound, wherein M is Cr, $0.55 \leq x \leq 0.98$ and $0 \leq d \leq 1$, where x, 1-x, d and 1-d are atomic ratios of Si, M, N and C, respectively, and the hard film has a combination of lubricity, low friction coefficient of less than 0.01μ , wear resistance provided by a hardness of 1900-2200 HV, small specific abrasion loss of 1.20×10^{-8} - 5.50×10^{-8} mm³/N-m, and adhesion of 55-67 N to a substrate in an aqueous environment. See Claim 1.

Significant features of the claimed hard film is that M is Cr and the atomic ratio of Si, variable x in Claim 1, is $0.55 \leq x \leq 0.98$.

The rejections of the claims under 35 U.S.C. §102(b) as set forth in paragraphs 4-8 of the Office Action are respectfully traversed. The cited references fail to disclose the claimed hard film.

Each of the cited references fails to disclose a Cr-Si-N type of composition, except for JP 05-195196 (JP '196). However, the atomic ratio of Si described in JP '196 is 0.0476 to 0.545, which is outside of the claimed range. Accordingly, the claimed film is not described by the cited references. Accordingly, withdrawal of those ground of rejection is respectfully requested.

The rejection of the claims under 35 U.S.C. §112, first paragraph, is respectfully traversed. The specification describes the term "small specific abrasion loss" at, for example, page 18, lines 11 and 14 and page 19, lines 9 and 10. Accordingly, withdrawal of this ground of rejection is respectfully requested.

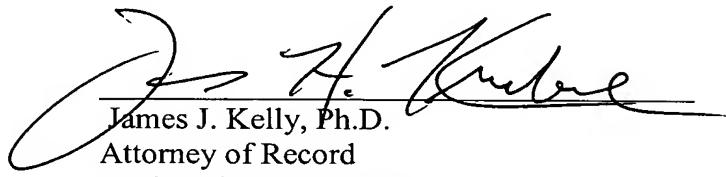
The rejection of the claims under 35 U.S.C. §112, second paragraph, is respectfully traversed.

Application No. 10/807,332
Reply to Office Action of November 15, 2006

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



James J. Kelly, Ph.D.
Attorney of Record
Registration No. 41,504

James H. Knebel
Registration No. 22,630

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)